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Introducing the...

## MDG - MAG AMP GENSET™

### **BACKGROUND - UPGRADE PROJECT ANALYSIS**

**History** - Electric Power production consists of utilizing some form of generation hardware and some force to create motion, usually utilizing some sort of fossil or renewable fuel to produce electric power. The power then needs to be delivered through transmission/distribution and low voltage wires to the load. When energy flows, electrons move between the molecules that make up the structure of the wire. The process of facilitating this movement is similar to shooting a projectile through matter. When a projectile, say a pellet from an air gun hits an object it splatters, a .22 splatters more; a howitzer cannon makes a bigger splatter of matter. In electric transmission when the higher flows encounter matter, the splatter makes heat (resistance); noise (harmonics) and magnetic “sideways” irradiative splatter in the form of fields of emissions called EMF - Electro Magnetic Fields.

The more power forced through a wire, especially if the wire is either too long, or of insufficient gauge, and the load is great, the more problematic the EMF factor becomes. The worldwide industry continually attempts to address this EMF problem, and it's related efficiency loss with the application of various types of exotic and expensive “super” conductors and strict guidelines for conductor sizes, etc etc etc...

**THE PROBLEM** - If a superior design, moderate cost superconductor (that doesn't need to be bathed in liquid nitrogen, etc.) emerges, then the entire existing transmission/distribution conductor system still needs to be totally replaced, at an enormous cost... Currently, even with the best calculations applied from the most eminent electrical engineers, there is still great existing transmission losses, and the resultant need to over generate to get the actual required power (plus the extra fuel consumed to produce the related EMF) to/for the load. The more power required to be flowed through power lines, especially during daily and seasonal peak demands, especially by older lines in over-burdened infrastructure areas - needing a capacity upgrade, the more severe the problem with the overall lower system efficiency, excessive heat and alleged health destroying EMFs.

**WHY FIX THE PROBLEM** - Very simply, to solve this problem means to supply a system that quickly and easily provides the permanent ability(s) to: conserve both water power and non-renewable fossil fuel resources, increase T&D system and customer load serving CAPACITY, greatly decrease the *alleged* cancer causing EMF dangers to

customers, provide the SAME required Peak power by using fewer generation plants - less expensive new power plants are “then” required plus new (ecosystem scaring) or higher capacity costly transmission line projects are NOT required - equivalent to the amount of efficiency gained (due to this new ability to optimize transmission efficiency, plus deliver more usable power, plus pre-deploy & STORE capacity all night long). With the new MDG M.A.G. and (optional) AC BATTERY POWER STATIONS w/ Hybrid Lithium Ion energy storage (w. any optional quantity extra hours dispatch) the prior art ecosystem destroying low 30-38% maximum conversion efficiency pumped storage and old fashioned prior art - problematic power “inverter & lead acid” batteries, plus Ni-Cad & Ni-Mh, are technology(s) of the past.

By deploying MDG power system peak capacity upgrade “turn-key package” technology most extremely expensive planned power line capacity upgrades can be deferred for many years or even totally eliminated. The need to continuously over generate is eliminated, plus those pollutants are permanently offset and stopped from polluting the air and environment – which extends non-renewable fuel supplies; functioning to provide more abundant and “guaranteed” daily peak load serving power capacities at the lowest cost per MW increase, plus serves to totally stabilize grid (by providing the combined potential extra spinning reserve capacity & reactive power supply of multiple atomic power plants) to permanently prevent any under capacity peak blackout problems for any area.

**THE SOLUTION** - MDG’s scientists & engineering team have developed the best way to cost effectively address the above and much more...  
Introducing the :

## **NEW! MDG ...EMF.. .....ACCUMULATOR™.....**

**YOU CAN NOW GET - 17.520 MEGAWATTS ADDITIONAL  
POLLUTION FREE ENERGY YEARLY -- from one (1) ordinary  
power pole 50 KW transformer !**

The well known worldwide Solar PV ???? electric power generator industry uses a constant and universal sun, plus a simple device with no fuel required and no moving parts. This facilitates opportunities for power generation infrastructure deployment to harvest an intermittent (yet powerful) energy “SOURCE” that is as near as everyone’s “backyard” to provide electric power: this well known image of photovoltaics has sparked the imagination of millions of people and stimulated deployment actions by corporations & the electric utility industry. The NEW advanced MDG M.A.G. enhanced AC BATTERY POWER Plant’s high efficiency performance, quick and easy deployment, plus advanced breakthrough Hyper-conductor™ technology plus Plug n’-

Play “modular” design - by harnessing the previously untapped enormous energy resource of FREE - **waste EMF** energy available from any utility grid access point - provides the unique ability to harness a SIMILAR untapped abundant new high capacity RESOURCE of “Green” 100% clean energy (to totally cancel problematic EMF!) .

**This SOURCE** of new (equal to & lower cost than prior art “renewables”) AC electric power capacity, capable of providing 4% of the 2,629 GW used in the USA per hour, is far more available, much easier to tap (although slightly less powerful) and yet is FAR more cost effective (generator hardware costs LESS – as low as 1/20<sup>th</sup>) the cost of PV, and as low as 1/5 the cost of wind. Its full maximized capacity output is more quickly “achievable”. Units are very compact, plus it is more easily deployable offering an unparalleled and permanent “sustainable” (infrastructure upgrade) electric power generation alternative method ...in addition this low-cost “retrofit” type upgrade (to instantly ultra modernize previously installed, old or under capacity T&D systems) is far “more” RELIABLE and constant (for 24/7 stabilized energy output) providing over 100 times more power (available output per day per \$ invested) than the industry’s current active cost prohibitive plan for (existing industry PV) using The Sun which, even though it bathes the earth with more energy each minute than the world consumes in one year, the conventional hardware’s energy conversion process efficiency is not cost effective for full scale electric utility power production, therefore opening up the door for MDG equipment..

### **WHY and HOW MUCH GENERATION...**

Each MDG M.A.G. EMF ACCUMULATOR equipped 50KW transformer has the ability to prevent 35,040 pounds of air pollutants a year, plus harvest/generate 17.520 megawatts OUTPUT of additional POLLUTION FREE 100% "Green" energy per year. Additional permanent peak power production capacity and pollutant reduction is quickly achieved by installing the solid state EMF ACCUMULATOR in-line (in series connection) on the low voltage side of transformers - requiring NO high voltage specialists! This (equivalent) similar peak power generation capacity increase would require a 10 KW/h Solar PV system (100 conventional solar PV panels - one hundred (100) watts each, plus costly & problematic power inverters and balance-of-system components, large conductors, plus a large size site footprint requirement) must be completely Grid Interactive, and operating at maximum efficiency (i.e. no clouds, rain, etc...), at cost of US\$7.50 per watt - or \$75K, compared to \$7,700 (MSRP - retail) for a single small capacity MDG solid state EMF ACCUMULATOR . In addition the compact (no maintenance required) MDG utility upgrade units output automatically - 24 hours a day.

On a 100 MW/hr. equipped substation, the additional “green” energy output ability is 4 MW/hr. – equivalent to installing 13-14 one megawatt wind machines, at a fractional cost of building, operating and maintaining a wind equipment site.

The increased value “option” of using MDG high efficiency AC BATTERY-POWER STATION Hy L-ion Energy Storage hardware to store and dispatch this new energy source’s off peak outputs - @ over 82% efficiency!, is able to store and recover value

from all the excess (..low value) Off-peak AC power generation outputs. This supplies zero fuel cost, zero pollution, renewable “type” Green energy - to cover additional AC POWER requirements during the critical daily PEAK DEMAND LOAD period (system also functions as a temporary back-up emergency power supply), to easily start and operate large electric motor loads – at average consumption, and therefore prevents or eliminates the need for new costly PEAK-demand fossil fuel power generation, eliminates or optimizes the use of all prior-art D.G. and renewable energy technologies, eliminates or optimizes expensive (exotic-fossil) fuel cells’ operation, by requiring a much smaller size fuel cell – making their ROI and “hybrid” MDG/Electric Cell project’s deployment much more cost effective to DG investors , lowers/offsets GHG pollution, plus delays or cancels need for expensive new T&D power line projects.

In addition to providing large instant **“spinning reserve”** type power capacity, the MDG “micro” Power Stations also supply the additional REACTIVE Power for starting large electric motor loads, without the utilities’ need to produce and send (over-generate) & have excess reactive power at-the-pole at all times! The previously wasted “reactive” Electric Power Capacity “fuel” resource that when not instantly used is thrown-away, can now be conserved due to the new advanced design hardware’s unique ability to automatically accumulate, output, store and dispatch the normally wasted energy - for instant or future use.

**Each single utility 50KW** utility application’s step-down transformer equipped with an MDG (50 kW/h flow) EMF ACCUMULATOR is able to now output 100% “Green”, zero pollution – harvested waste energy @ 48KW/day - 17,520,000 watts each year!

**Now...** a utility installation (of only 20 MDG - M.A.G. EMF Accumulators - on any twenty (20) existing 50 kW utility transformers) can be quickly retrofitted to output 350,400,000 watts per year (40 kW/hr.) creating a new 100% “clean” power resource. The full scale deployment to quickly upgrade the existing infrastructure system is able to provide the REAL, “sustainable” solution for providing 100% Pollution FREE “Green” energy production capacities identical to fossil & atomic power, or better - (because of the far superior pure wave and high reliability properties !) more output than Solar PV and Wind power - much like dependable properties of atomic, Geothermal or Hydropower, without burning more carbon, and without installing any new (additional) power generation plants or additional T&D lines, while providing the ready intertie (through the AC Battery) for future DG installations at each MDG equipment site .

**The OUTPUT POWER:** each M.A.G.-50 system is equivalent to a 2,000 watt hour solar PV array’s output (requiring 20-100w PV Panels), BUT outputs 24 hours a day – compared to about 5 hours for PV. This is a one-time cost for major utility upgrade, producing 100% reliable and pollution FREE grid power for over 40+ years -- with NO fossil fuel storage, and NO fossil fuel cost, NO fossil fuel generation equipment, NO major system replacement and w/ NO maintenance required, with NO DC &/or problematic power inverters needed!

Residential - lt. commercial “Green” energy @ \$3,840 per kW - but outputs  
Reliable 24/7/365 power – see \$650 utility cost list!  
...less than 1/7 the actual operating cost per kilowatt of residential solar !  
...daily PEAK kilowatt hours for as low as **\$0.20 per watt - \$200/KW** for large size  
electric utility scale deployment!

The (combination ACB-PP/ M.A.G. power generation technology) “green power” upgrade allows up to 11% more customers to be served w/o utility over generating, purchasing more power or building any costly new generation (for up to the next 20 years!), plus w/o needing ANY transmission/distribution lines’ upgrades to serve more customer peak load – and much more if low cost off-peak nighttime power is purchased and stored.

**Low capacity, conventional RE** – Again, “Solar” PV only outputs 4 - 5.5 hours average each day; in comparison the MDG EMF accumulator outputs “automatically” 24 hours a day, seven days a week and 365 days a year, even in the dark or in poor weather with OR w/o any wind! To provide the equivalent power output from existing Solar PV, one would require 5 times the amount of PV panels (2,000 watts @ 4.8 hrs. /day x 5 (2kW systems) = 10 kWh {10,000w x \$7.50/w (PV cost) = \$75,000} in order that “ideally” the 10KW/h system would perform for 4.8 hrs. (at max. output) each day to equal the 100% maintenance free energy output of the 48KW/day MDG-50 EMF ACCUMULATOR grid intertied GENSET .

**It's a ONE-TIME COST** - to harvest the wasted EMF energy from 1MW of existing energy flow to PRODUCE “Green” energy Output of 40kW each hour! That is up to 350.4 Megawatts per year of continuous available (not FREE!) energy output harnessed from the - normally WASTED problematic (now totally canceled) EMF without any additional fossil fuel COST, usage or extra required generation expenses, w/o related manpower costs, w.o. excessively long project ROI and without high prior art RE hardware costs.

This MDG technology totally eliminates the alleged cancer causing EMF ! Plus the above very limited (1 MW flow) example provides pollution reduction of over 66 million pounds of air pollutants over its service life ...

## **TRANSMISSION / SUBSTATION, POWER POLE**

The low voltage - 240 / 480 VAC outputs from M.A.G. unit installations at power poles are able to provide a concentrated source of valuable, reliable energy to more efficiently supply remote customer load or to upgrade “load pocket” areas plus provide increased capacity to satisfy the many new Renewable Energy Portfolio standards & requirements that mandate an increasing quantity of “green” energy output/purchases by utilities each year. The MDG energy conservation upgrade technology outputs *negawatts* – every negawatt produced by MDG hardware is equal to the value of additional AC power (watts) that do not have to be purchased (or generated) and transmitted.

**BREAKTHROUGH** - MDG technology has the ability to eclipse by MANY times, the current maximum yearly “green” power negawatt output produced by all worldwide: utility, commercial and private Solar PV usage combined. MDG can do this at a fraction of PV’s comparative expense – same for wind, with NO production bottlenecks (due to easy common parts availability and ease of mass production by conventional means), with no system siting problems, plus system is quick and easy for electric utilities to install. The new combination MDG MAG EMF ACCUMULATOR /AC BATTERY Power Station System (\$650 per actual MW, and \$200 per extra KW hours) can either be used to upgrade Wind Systems or can replace Wind power, especially in areas where wind turbine projects are not a viable alternative.

This MDG technology is currently ready for full-scale pilot plant deployment. MDG system planners are taking pre-production orders, demonstrating and conducting major system capacity increase & project planning analysis at this time. If you would like more information, MDG will be happy to provide price quotes and project consulting services for your company, power distribution organization, municipality or utility to further investigate the GREEN energy upgrade economics with this and/or other valuable MDG environmental technology.

***Don’t miss the...***

## **EMISSIONS BENEFITS**

Example: your utility’s existing 1GW/hr energy flow at 4% emission reduction using the MDG EMF ACCUMULATOR apparatus (cost \$16.6M per each GW transmission line flow, \$416K/MW plate capacity output) to offset pollution is able to produce a CO2 reduction of 27.26 TONS of CO2 each hour (238,143 T per year) for producing less GHG pollution plus 40MW/hr additional “green” real time power production output. These real time outputs can either be used to produce hydrogen fuel, can be used to power local on-site loads, or can be stored in the \$650K/MW (first hour price includes M.A.G. hardware) AC Battery energy storage for later peak demand grid dispatch – at far lower cost than hydrogen production and storage systems.

Your multi megawatt output AC Battery power plant will rapidly pay for itself – without using any additional fossil fuel.

The M.A.G. EMF Accumulator’s low value off-peak generation outputs can be stored to provide MORE PEAK DEMAND CAPACTY without building any more fossil fuel peak power plant generating capacity. Additional LOW-cost AC output hours are available upon customers request - @ \$200 each additional KW/hr. storage hardware cost.

MDG Power Engineering can design, build, install and operate the required waste energy “EMF harvesting” system to provide your utility grid operation with additional clean safe zero harmonics power capacity for half (50%) of the retail selling value of the provided

peak output power – at NO additional cost to your budget, plus you keep any applicable renewable energy generation credits!

Don't delay finding out more about how your company can quickly and easily upgrade to greatly increase yearly profits with this breakthrough MDG - retrofit solution.

Call MDG today.... PH: 570/ 443-7892

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